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EUROPEAN PATENT APPLICATION

(21) Application number: 90304343.8

Int. Cl.⁵ B26B 5/00

②② Date of filing: 23.04.90

Priority: 25.04.89 GB 8909424

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④ Date of publication of application:
31.10.90 Bulletin 90/44

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③³⁴ Designated Contracting States:
AT BE CH DE DK ES FR GB GR IT LI LU NL SE

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③ A snap-off blade knife.

(57) A detachable rear-end handle part (16) of a snap-off blade knife has a recess (30) and slot (34) which engage the front end (22) of a front handle part (14) and a used blade end-portion (28) only one way round and which, by virtue of different angles of recess walls (42, 44), allow only one direction of

relative bending of handle parts (14, 16) to break-off the blade end-portion (28), corresponding to the side of the single blade surface (24) formed with the break-lines (26). Hence the blade is always bent the right way.

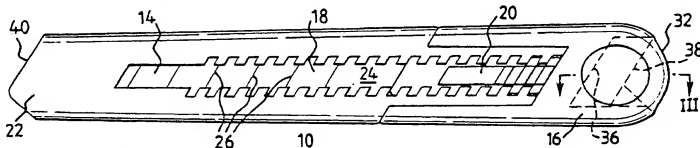


FIG. 2.

A SNAP-OFF BLADE KNIFE

This invention relates to a snap-off blade knife.

A known snap-off blade knife comprises a handle made in at least two parts which assemble together for normal use of the knife, a first said part carrying a snap-off blade and a slider connected to the blade for protruding the blade from one end of said first part, said end forming a front end of the handle, one surface only of the blade having break-lines which are obliquely-angled relative to the cutting edge of the blade, a second said part being detachable from the first said part and being adapted for use in snapping-off a used blade-end portion, the second said part being formed with a slot to receive the used blade-end portion protruding from the front end of the handle.

Because the break-lines are formed only on the one surface of the blade, the blade-end portion must be bent downwardly if that surface is uppermost or, conversely, must be bent upwardly if that surface is lowermost, since otherwise the blade will fracture uncontrollably and with possibly dangerous results.

It is an object of the invention to provide a snap-off blade knife designed to encourage proper breakage, and discourage improper breakage, of used blade-end portions from the blade.

The invention provides a snap-off blade knife as claimed in each of the claims, to which reference is directed.

The invention will be described by way of example with reference to the drawings, wherein: -

Figs. 1 to 4 illustrate a knife forming a first embodiment of the invention, being respectively back and front elevations, a plan view (including a section on III-III of Fig. 2) and a rear end view of the knife;

Fig. 5 illustrates the knife of Figs. 1 to 4, showing a blade-end portion about to be broken off;

Fig. 6 illustrates a modified knife, with the handle parts separated;

Figs. 7 and 8 are sections on VII-VII and on VIII-VIII respectively in Fig. 6; and

Fig. 9 illustrates the knife of Figs. 6 to 8, showing a blade end portion about to be broken off.

Referring to Figs. 1 to 5, there is illustrated a first embodiment of the invention, in the form of a snap-off blade knife 10 which comprises a handle 12 made in two parts 14, 16 which assemble together for normal use of the knife 10.

The first said part 12 carries a conventional snap-off blade 18 and a conventional slider 20 connected to the blade 18 for protruding the blade 18 from one end 22 of said first part 12. This end

22 forms a front end of the handle 12.

As usual, one surface 24 only (that is, not the opposite surface) of the blade 18 has break-lines 26 which are obliquely-angled relative to the cutting edge of the blade 18. This surface 24 faces the slider 20.

The second part 16 of handle 12 is detachable from the first said part 14 and is adapted for use in snapping-off a used blade-end portion 28. More particularly, the second said part 16 is formed with a recess 30 at the rear end 32 of handle 12, and is also formed with a slot 34 within the recess 32 to receive the used blade-end portion 28 protruding from the front end 22 of the handle 12.

Because the break-lines 26 are formed only on the one surface 24 of the blade 18 (i.e. the surface facing slider 20), and are not formed on the other surface, the blade-end portion 28 must be bent downwardly if that surface 24 is uppermost or, conversely, must be bent upwardly if that surface 24 is lowermost, since otherwise the blade 18 will fracture uncontrollably and with possibly dangerous results.

Accordingly, the slot 34 is shaped to receive the used blade-end portion 28 properly one way round but not the opposite way round, whilst the recess 30 is shaped to allow relative deflection of said first and second parts 14, 16 of the handle 12, for snapping-off the used blade-end portion 28, in one direction, corresponding to the blade surface 24 having the break-lines 26, but not the opposite direction.

More particularly, the slot 34 has a bottom edge 36 which is angled the same way as the break-lines 26. Also, the recess 30 has a bottom surface 38 at the same angle, to engage a similarly angled surface 40 at the front end 22 of handle part 14.

The recess 30 has two surfaces 42, 44 which are at different angles as shown clearly in Figs. 3 and 5. When handle end 22 and used blade-end portion 28 are respectively inserted the correct way round in recess 30 and in slot 34, the recess surface 42 abuts a surface 46 (Fig. 3) on the corresponding side of the handle end 22 - namely, the side of the slider 20, as shown in Fig. 5

- and inhibits or discourages relative bending of the handle parts 14, 16 in that direction. Contrariwise, the recess surface 44 is spaced from the corresponding surface 48 of the handle end 22 (on the far side from the slider 20) and permits relative bending of the handle parts 14, 16 in that direction, indicated by arrows 50, 52 in Fig. 5. Since (as mentioned above) the blade surface 24 having the

break-lines 26 faces the same way as slider 20 - downwardly in Fig. 5 - relative bending of handle parts 14, 16 in the directions shown by arrows 50, 52 in Fig. 5 opens up the break-lines 26 and achieves a clean break.

The only difference in the second embodiment of Figs. 6 to 9 is that the recess 30A and slot 34A are in the side instead of the end of handle part 16A, with corresponding change in the relative orientation of handle parts 14 and 16A - see Fig. 9 - when snapping-off a blade-end.

Fig. 6 shows how handle part 14 (the same as in Figs. 1 to 5) conventionally engages handle part 16A. Handle part 14 has two walls 54, 56 which are formed with conventional detent teeth 58, 60 on their respective inside surfaces, to conventionally engage the slider 20. Cutouts 62, 64 slidably accommodate walls 66, 68 of handle part 16A. Walls 66, 68 are overhung or undercut to receive flanges 70, 72 of handle part 14, as shown in Fig. 6. (Handle parts 14, 16 of the first embodiment of Figs. 1 to 5 are assembled in the same way, not shown.)

recess (30) is in an end (32) of the second part (16).

4. A knife as claimed in claim 2, wherein the recess (30A) is in one side of the second part (16A).

Claims

1. A snap-off blade knife (10), comprising a handle (12) made in at least two parts (14, 16) which assemble together for normal use of the knife, a first said part (12) carrying a snap-off blade (18) and a slider (20) connected to the blade (18) for protruding the blade (18) from one end (22) of said first part, said end (22) forming a front end of the handle (12), one surface (24) only of the blade (18) having break-lines (26) which are obtusely-angled relative to the cutting edge of the blade (18), a second said part (16) being detachable from the first said part (14) and being adapted for use in snapping-off a used blade-end portion (28), the second said part (16) being formed with a recess (30) to receive the front end (22) of the handle (12) and a slot (34) within the recess (30) to receive the used blade-end portion (28) protruding from the front end (22) of the handle (12), the slot (34) being shaped to receive the used blade-end portion (28) properly one way round but not the opposite way round, the recess (30) being shaped to allow relative deflection of said first and second parts (14, 16) of the handle (12), for snapping-off the used blade-end portion (28), in one direction, corresponding to the surface (24) of the blade (18) having the break-lines (26), but not the opposite direction.

2. A knife as claimed in claim 1, wherein the second part (16) forms an extension of the first part (14).

3. A knife as claimed in claim 2, wherein the

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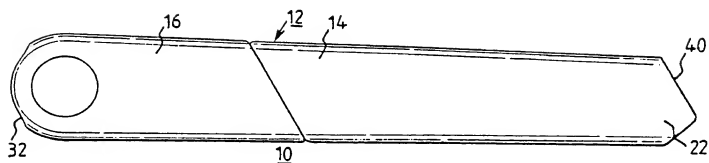


FIG. 1.

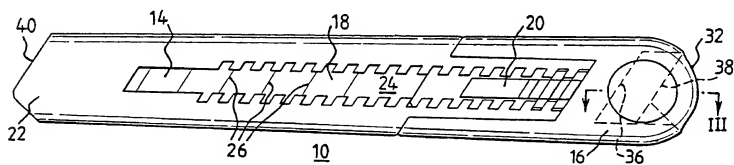


FIG. 2.

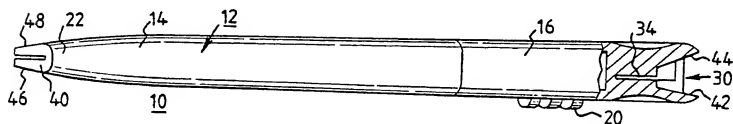


FIG. 3.

FIG. 4.



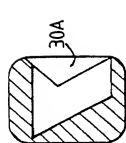
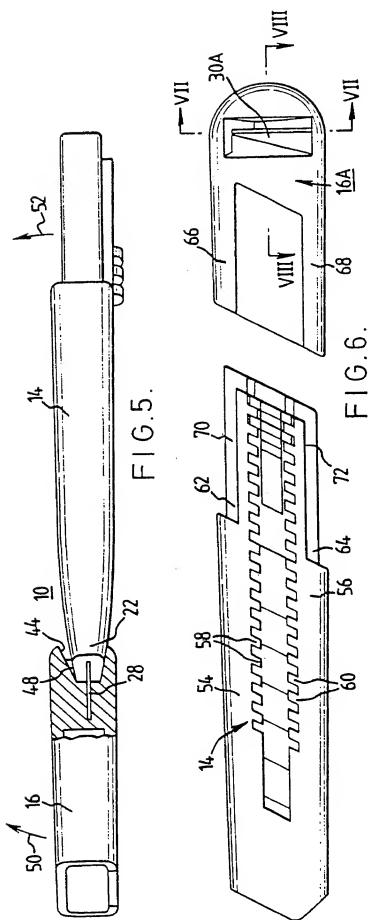


FIG. 7.

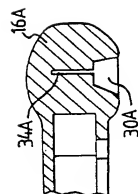


FIG. 8.

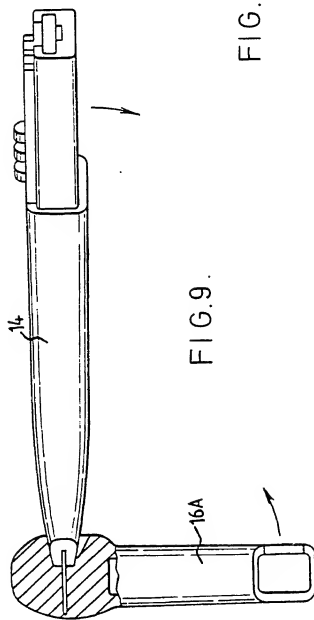


FIG. 9.



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DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	GB-A-2206832 (NIPPON TENSHASHI KABUSHIKI KAISHA) * abstract; figure 1 * ---	1	B26B5/00
A	US-A-4240202 (GILBERT) * abstract; figure 8 * ---	1	
A	DE-U-8801417 (H. SCHNEIDER) * page 9, lines 16 - 19; figure 1 * -----	1, 3	
			TECHNICAL FIELDS SEARCHED (Int. Cl.5)
			B26B B26F
The present search report has been drawn up for all claims			
Place of search THE HAGUE		Date of completion of the search 20 JULY 1990	Examiner CROWE D.
CATEGORY OF CITED DOCUMENTS			
X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document		T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application I : document cited for other reasons & : member of the same patent family, corresponding document	